

NOAA Fisheries West Coast Region
Recovery Plan for Endangered Snake River Sockeye Salmon
June 2015

Questions & Answers

Why is a recovery plan needed for Snake River sockeye salmon?

Snake River sockeye salmon was listed as an endangered species under the Endangered Species Act (ESA) in 1991. An endangered species is one that is likely to become extinct in the foreseeable future throughout all or a significant portion of its range. The Snake River sockeye salmon's endangered status was affirmed under the ESA on June 28, 2005. The ESA requires NOAA Fisheries to develop recovery plans for all listed species under the agency's jurisdiction.

When Snake River sockeye salmon was listed in 1991, there was only one historical population remaining (Redfish Lake), with fewer than 10 fish returning annually. There are two additional historical populations (Alturas Lake and Stanley Lake), and possibly four (including Pettit and Yellowbelly lakes), in Idaho's Sawtooth Valley. Collectively, five populations comprise the Snake River sockeye salmon evolutionarily significant unit (ESU), which is the listing unit under the ESA. Currently, only the Redfish Lake population, which is supported by a captive broodstock program, exists. Many other salmon species have several component populations spread out over a wide geographic range and therefore they have more diversity and potential resilience in the face of environmental change. If the Redfish Lake sockeye salmon population is lost, the genetic legacy that makes Snake River sockeye salmon unique will be lost.

What is a recovery plan and what is in the final recovery plan for Snake River sockeye salmon?

Section 4(f) of the Endangered Species Act (ESA) directs NOAA Fisheries to develop and implement recovery plans for threatened and endangered species under its jurisdiction. This recovery plan serves as a resource to organize on-the-ground action to recover endangered Snake River sockeye salmon. The plan provides guidance to those implementing the plan, such as state and federal resource managers.

The ESA requires that recovery plans contain, to the extent practicable, (1) a description of site-specific management actions necessary to achieve the plan's goal for the conservation and survival of the species; (2) objective, measurable criteria which, when met, would result in a determination that the species should be removed from the list; and (3) estimates of the time required and cost to carry out the measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal. Recovery plans also need to be consistent with NOAA Fisheries' mandates to provide for sustainable fisheries and to meet tribal treaty and trust obligations.

What is an evolutionary significant unit?

An evolutionary significant unit, or ESU, is a distinctive group of Pacific salmon that is uniquely adapted to a particular area or environment. A population segment is considered distinct if it is discrete from and significant to the remainder of its species based on factors such as physical,

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behavioral, or genetic characteristics; it occupies an unusual or unique ecological setting; or its loss would represent a significant gap in the species' range. An ESU may contain multiple populations that are connected by some degree of migration, and hence may have a broad geographic range across watersheds and river basins.

What does “recovery” mean?

Under the Endangered Species Act (ESA), recovery means the species is naturally self-sustaining and no longer needs the protection of the ESA. Therefore, it can be “delisted,” or taken off the list of threatened and endangered species. Delisting also requires a determination that the threats to the species' survival have been addressed and protections are in place that would prevent further listings in the future. Recovery goes beyond ESA delisting, however, to include broad sense recovery goals that include activities such as long-term sustainable fishing opportunity.

What is the scientific basis for the recovery plan?

The recovery plan draws on the work of the Interior Columbia Technical Recovery Team (ICTRT), a team of scientists brought together by NOAA Fisheries to provide the scientific foundation for the plan. It included biologists from NOAA Fisheries, states, tribes, and academic institutions. The ICTRT identified the historical populations comprising the major population group and subsequent Snake River sockeye salmon evolutionarily significant unit, which is the listing unit under the Endangered Species Act. It also recommended viability criteria, or targets that are based on the biological parameters of abundance, productivity, spatial structure, and diversity, which help to define when a species is healthy enough to warrant delisting.

In addition to the work of the ICTRT, the recovery plan incorporates available scientific literature, state and tribal recovery strategies, studies of Sawtooth Valley lake conditions, and results from the captive broodstock program. It also draws information from four “modules” developed to address conditions in the Columbia and Snake River mainstems, the estuary, and the ocean. The four modules summarize the following:

- *Hydropower Module and a Supplement for Snake River Salmon and Steelhead*: effects of federal and non-federal mainstem Snake and Columbia River hydropower programs
- *Estuary Module*: recovery actions needed in the Columbia River estuary
- *Module for the Ocean Environment*: conditions in the estuary, plume, and Pacific Ocean
- *Harvest Module*: fisheries impacts in the Snake and Columbia rivers, estuary, and ocean

What is the goal of this recovery plan?

The goal of this recovery plan is to recover Snake River sockeye salmon and delist the species from the federal list of threatened and endangered species.

Am I legally required to implement this recovery plan?

The recovery plan is not a regulatory document and implementation of the final recovery plan is voluntary. Although the Endangered Species Act (ESA) requires NOAA Fisheries to develop

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recovery plans, NOAA Fisheries relies on federal, state, tribal, and local agencies and organizations, as well as local citizens to voluntarily implement the actions identified in the plan. In many cases, the plan acknowledges and recommends coordinating the pre-existing, ongoing efforts that contribute to recovery, including conservation plans, completed ESA section 7 consultations and permits, and pre-existing laws or regulations that are expected to benefit the species and its environment.

What is the anticipated timeframe for recovering Snake River sockeye salmon?

We anticipate it taking 50 to 100 years to recover Snake River sockeye salmon to self-sustaining levels.

Who makes the decision to delist Snake River sockeye salmon from the Endangered Species List?

Under the Endangered Species Act (ESA), the listing and delisting of Pacific salmon and steelhead are the responsibility of NOAA Fisheries. A species can be delisted when it has improved to the point that it is naturally self-sustaining and no longer threatened with extinction.

The delisting decision must be based on the best available science concerning the current status of the species and its prospects for long-term survival. Delisting criteria include not only biological criteria but also criteria that address the threats to a species.

Who worked with NOAA Fisheries in the development of this recovery plan?

NOAA Fisheries collaborated with state, tribal, and federal biologists and resource managers, each of whom helped to provide the technical foundation for the plan. In addition, NOAA Fisheries established a multi-state (Idaho, Oregon, and Washington), tribal, and federal partners' regional forum called the Snake River Coordination Group that addresses the four Snake River salmon and steelhead species listed under the Endangered Species Act.

How did NOAA Fisheries revise the final recovery plan based on public comments it received on the 2014 proposed recovery plan?

In 2014, NOAA Fisheries received comments on the proposed recovery plan from state and federal entities, as well as interested citizens. These comments did not result in major changes to the final recovery plan. However, the public comments received were constructive and resulted in helpful fine tuning of several sections. Edits based on public comments include expanding the description of key limiting factors and threats, and identifying the need for future prioritization of recovery actions. The final recovery plan more fully describes the different life history forms of sockeye salmon found in the natal lakes of the Sawtooth Valley, and the importance of protecting native kokanee to support overall genetic diversity of native fish species. In addition, the executive summary was expanded to include more information from the recovery plan, such as descriptions of the biological delisting criteria. The executive summary and recovery plan were also updated with the latest 2014 adult sockeye abundance numbers and results from on-going sockeye research.

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What strategies are identified to restore the sockeye salmon population in Redfish Lake?

When Snake River sockeye salmon was listed in 1991, managers started a captive broodstock program for the Redfish Lake population. This program has successfully prevented the extinction and preserved the genetic lineage of Redfish Lake sockeye salmon. However, Snake River sockeye salmon still face extinction. The captive broodstock program has improved the numbers of hatchery-produced sockeye salmon, and in the three most recent years the levels of wild sockeye salmon returns have increased. However, substantial increases in survival rates across life history stages must occur in order to reestablish a self-sustaining wild population.

The recovery plan includes three phases to recover Snake River sockeye salmon, each with a distinct set of goals:

- Phase 1: Preventing extinction and building genetic resources using the captive broodstock program.
- Phase 2: Securing the Redfish Lake population and developing strategies to reintroduce sockeye salmon into Pettit and Alturas lakes.
- Phase 3: Building capacity of the stock to transition from the hatchery program to a local natural population.

The hatchery program is now poised to transition from Phase 1 to Phase 2, with an emphasis on supporting relatively high levels of spawners in Redfish Lake.

How will we restore sockeye salmon beyond Redfish Lake?

The recovery plan seeks to restore viable, self-sustaining populations in at least three or more natal lakes. Currently, the hatchery program focuses actions on Redfish Lake because of its high production potential. However, the recovery plan includes recovery strategies and actions for increasing the distribution, or spatial structure, of sockeye salmon beyond Redfish Lake. The Interior Columbia Technical Recovery Team proposed biological viability criteria that must be met before Snake River sockeye salmon can be delisted. A minimum of 1,000 wild spawners must be achieved in both Redfish Lake and Alturas Lake. The minimum spawning abundance threshold for Pettit, Stanley, or Yellowbelly lakes is 500 wild spawners.

There may be a native sockeye salmon population in Alturas Lake that is genetically unique from Redfish Lake sockeye salmon. The strategies for restoring this population include: (1) trapping and transporting any adults that are identified to be of Alturas Lake-origin and releasing the adults into Alturas Lake for volitional spawning; (2) establishing a hatchery program at the Eagle Fish Hatchery for Alturas Lake-origin sockeye salmon; and (3) potentially establishing a broodstock program.

The strategies for restoring sockeye salmon in Pettit Lake include: (1) allowing adults to return for volitional spawning; and (2) short-term releases of captive broodstock adults into Pettit Lake using sockeye salmon from Redfish Lake. After several years of releasing Redfish Lake fish into Pettit Lake, stocking would stop and scientists would evaluate natural production.

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To restore viable sockeye salmon populations in at least three or more natal lakes, as identified in the strategies above, the recovery plan goes further to address the needs of sockeye salmon throughout their entire life cycle. The plan calls for protecting the relatively healthy habitat conditions in the Sawtooth Valley, while also taking discrete actions to meet the biological needs of the fish during their migration through the Salmon, Snake, and Columbia River mainstems, estuary, plume, and ocean.

The full suite of strategies and actions are found in sections 6 and 7 of the recovery plan.

What does the recovery plan recommend for improving sockeye salmon survival on the Salmon River's mainstem and throughout its entire life cycle?

S Snake River sockeye salmon face several challenges on the mainstem Salmon River, including high water temperatures, significant levels of sediment and silt, low water flows, and predation. To address these factors, the recovery plan recommends several actions, including but not limited to:

- Protecting and enhancing tributary and watershed habitat on the Salmon River;
- Increasing stream flows by implementing water conservation measures, improving water delivery, and improving water storage function of riparian areas and wetlands;
- Identifying specific actions and parties that have the ability to improve water quality and quantity of juvenile and adult migration corridor habitat;
- Investigating relatively high losses of juvenile and adult sockeye salmon in the Salmon River and identifying actions to reduce these losses; and
- Implementing the Idaho Department of Agriculture, U.S. Forest Service and Idaho Department of Fish and Game's invasive species monitoring and control programs.

The recovery plan addresses the needs of Snake River sockeye salmon throughout their entire life cycle, which includes their migration beyond the Salmon River through the Snake and Columbia River mainstems, estuary, plume, and ocean. It includes actions such as:

- Protecting and enhancing existing habitat conditions and conserving natural ecological processes;
- Implementing the actions identified in the Federal Columbia River Power System Biological Opinion to reduce mortalities associated with passage through the mainstem Columbia and Snake River hydroelectric projects;
- Improving survival for all life stages in the migration corridor;
- Managing risks associated with mainstem Columbia River and Snake River fisheries;
- Monitoring and controlling predation, disease, aquatic invasive species and competition;
- Responding to climate change threats by implementing research and monitoring to track indicators and by preserving biodiversity; and
- Research, monitoring, and evaluation actions that will provide critical information for assessing fish health and be used to make adaptive management decisions.

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What is the relationship between a recovery plan and Endangered Species Act consultations under section 7, as well as other types of regulatory decisions?

Recovery plans provide important context and guidance that NOAA Fisheries, action agencies, and permittees can use in Endangered Species Act section 7 consultations and other regulatory decisions. Recovery plans may incorporate actions from consultations and permits because those actions are likely to contribute to recovery. Because of the consultations and permits in place, those recovery actions are reasonably certain to occur and may provide a foundation for other actions called for by the recovery plan.

Where can I access the recovery plan?

You can access the electronic version of the *Snow River Sockeye Salmon Recovery Plan*, as well as accompanying materials, on NOAA Fisheries West Coast Region's website at:

http://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/snow_river/snow_river_salmon_recovery_subdomain.html

You can also receive a CD-ROM of the recovery plan and accompanying materials by mail. For a CD-ROM of the plan, please contact Rosemary Furfey at:

Address: NOAA Fisheries West Coast Region, 1201 N.E. Lloyd Boulevard, Suite 1100,
Portland, OR 97232

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Who can I contact for more information?

For more information related to the *Snow River Sockeye Salmon Recovery Plan* or for ways to get involved in recovering Snow River sockeye salmon, please contact Rosemary Furfey at: Rosemary.Furfey@noaa.gov